



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/661,560	09/15/2003	Tomoyoshi Yokota	Q77127	7979
23373	7590	06/02/2005	EXAMINER	
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			NGUYEN, HANH N	
			ART UNIT	PAPER NUMBER
			2834	

DATE MAILED: 06/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

<b>Office Action Summary</b>	<b>Application No.</b> 10/661,560	<b>Applicant(s)</b> YOKOTA ET AL.	
	<b>Examiner</b> Nguyen N. Hanh	<b>Art Unit</b> 2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 February 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3 and 5-15 is/are pending in the application.
- 4a) Of the above claim(s) 7-15 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 6 is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 September 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 0304 03/03
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Remarks***

1. In view of amendments, the Examiner withdraws the objection to claim 6 as being dependent upon a rejected base claim. The Examiner also withdraws the allowable subject matter of claim 5 due to newly found evidence patented to Ishizuka (US 5,175,460).

### ***Claim Objections***

2. Claim 5 is objected to because there is no antecedent basis for "the non-magnetic portion" in line 14. Appropriate correction is required.

### ***Election/Restrictions***

3. Newly submitted claims 7-15 directed to an invention that is independent or distinct from the invention originally claimed for the following reasons:

- I. Claims 1 and 3 drawn to the commutator motor, classified in class 310, subclass 216.
- II. Claims 5 and 6 drawn to the commutator motor, classified in class 310, subclass 216.
- III. Claims 7-10 drawn to the commutator motor, classified in class 310, subclass 217.
- IV. Claims 11-13 drawn to the commutator motor, classified in class 310, subclass 254.
- V. Claims 14 and 15 drawn to the commutator motor, classified in class 310, subclass 254.

Art Unit: 2834

4. The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the combination (group I) does not require "the non-magnetic portion". The subcombination (group II) has separate utility such as [in a motor which does not require the particulars of the combination (a pair of convex portion)].

Inventions I and III are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the combination (group I) does not require "the caulking is disposed corresponding to a fixing position to which the field magnet is fixed". The subcombination (group III) has separate utility such as [in a motor which does not require the particulars of the combination (a pair of convex portion)].

Inventions I and IV are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and

(2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the combination (group I) does not require the “grooves formed on inner peripheral surface of the stator yoke”. The subcombination (group IV) has separate utility such as [in a motor which does not require the particulars of the combination (a pair of convex portion)].

Inventions I and V are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the combination (group I) does not require “at least one concave/convex portion disposed at an outer periphery of the stator yoke”. The subcombination (group V) has separate utility such as [in a motor which does not require the particulars of the combination (a pair of convex portion)].

Inventions II and III are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the combination (group II) does not require “the caulking is disposed corresponding to a fixing position to which the field

magnet is fixed". The subcombination (group III) has separate utility such as [in a motor which does not require the particulars of the combination (the non-magnetic portion)].

Inventions II and IV are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the combination (group II) does not require the "grooves formed on inner peripheral surface of the stator yoke". The subcombination (group IV) has separate utility such as [in a motor which does not require the particulars of the combination (the non-magnetic portion)].

Inventions II and V are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the combination (group II) does not require "at least one concave/convex portion disposed at an outer periphery of the stator yoke". The subcombination (group V) has separate utility such as [in a motor which does not require the particulars of the combination (the non-magnetic portion)].

Inventions III and IV are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed

Art Unit: 2834

does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the combination (group III) does not require "grooves formed on inner peripheral surface of the stator yoke". The subcombination (group IV) has separate utility such as [in a motor which does not require the particulars of the combination (the caulking is disposed corresponding to a fixing position to which the field magnet is fixed)].

Inventions III and V are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the combination (group III) does not require "at least one concave/convex portion disposed at an outer periphery of the stator yoke". The subcombination (group V) has separate utility such as [in a motor which does not require the particulars of the combination (the caulking is disposed corresponding to a fixing position to which the field magnet is fixed)].

Inventions IV and V are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP §

Art Unit: 2834

806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the combination (group IV) does not require "at least one concave/convex portion disposed at an outer periphery of the stator yoke". The subcombination (group V) has separate utility such as [in a motor which does not require the particulars of the combination (grooves formed on inner peripheral surface of the stator yoke)].

5. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 7-15 withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1 and 3 are rejected under 35 U.S.C. 102(b) as being anticipated by Fujiwara et al.

Regarding claim 1, Fujiwara et al. disclose a commutator motor, comprising: a stator comprising stator yoke (30 in Fig. 8C) having tubular shape and extending in its



axial direction and having an inner peripheral surface, and a field magnet (40 in Figs. 1-11) fixed to the inner peripheral surface of stator yoke for providing field magnetic pole in the stator; and an armature (60 in Fig. 4) rotatably disposed within the stator; wherein the stator yoke constituted by one of (a) a plurality of plate-like annular bodies (32 in Fig. 8) having iron parts (Col. 4, lines 1-5 disclose annular body 32 made by silicone steel sheet and silicone steel is a soft magnetic iron) which are stacked on each other coaxially in the axial direction of the stator yoke (Fig. 8C), and (b) a plurality of substantially identically configured iron plate-like arcuate bodies disposed at such position as form a part of virtual annular bodies and which are stacked on each other coaxially in the axial direction of the stator yoke; and wherein the plurality plate-like annular bodies (32) or the plate-like arcuate bodies adjacent to each other in the stacked direction are fixedly connected each other by caulking (by laminating silicone steel sheet as described in Col. 4, lines 1-5. The Examiner interprets caulking as laminating because Webster's defines "to caulk" as "to stop up and make tight against leakage and "to laminate" as to unite by an adhesive or other means") and wherein at least one pair of convex portions protrude radially inwardly from the inner peripheral surface of the stator yoke for retaining the field magnet between the convex portions.

Regarding claim 3, Fujiwara et al. also disclose a commutator motor wherein the plurality of plate-like annular bodies (32 in Fig. 8) or the plate-like arcuate bodies have an inner peripheral surface defining the inner peripheral surface of the stator yoke, and wherein least one pair (Fig. 8 shows two pairs) convex portions protrude radially

inwardly from inner peripheral surface of the plurality of plate-like annular bodies or the plate-like arcuate bodies for retaining the field magnet between convex portions.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fujiwara et al. in view of Ishizuka.

Regarding claim 5, Fujiwara et al. show all limitations of the claimed invention except showing the commutator motor wherein the non-magnetic portion is defined by a hollow groove extending in the axial direction of the stator yoke and formed in the inner peripheral surface of the stator yoke, and wherein the stator yoke has a non-magnetic portion at a substantially center portion of the field magnetic pole in a radial cross-section of the stator yoke.

However, Ishizuka discloses an electric machine wherein the non-magnetic portion (16 in Fig. 1) is defined by a hollow groove extending in the axial direction of the stator yoke and formed in the inner peripheral surface of the stator yoke, and wherein the stator yoke has a non-magnetic portion at a substantially center portion of the field magnetic pole in a radial cross-section of the stator yoke for the purpose of increasing the magnetic circuit reluctance.

Since Fuziwara et al. and Ishizuka are in the same field of endeavor, the purpose disclosed by Ishizuka would have been recognized in the pertinent art of Fuziwara et al.

It would have been obvious at the time the invention was made to a person having an ordinary skill in the art to modify Fuziwara et al. by making a hollow groove extending in the axial direction of the stator yoke and formed in the inner peripheral surface of the stator yoke at a substantially center portion of the field as taught by Ishizuka for the purpose of increasing the magnetic circuit reluctance.

### ***Response to Arguments***

8. Applicant's arguments filed on 2/28/2005 have been fully considered but they are not persuasive. The applicant's argument is on the ground that "there is no disclosure, whatsoever, that at least on pair of convex portions protrude radially inward from the inner peripheral surface of the stator yoke". The Examiner respectfully disagrees with the Applicant. Fig. 8A clearly shows a on pair of convex portions of plate 32 protrude radially inward from the inner peripheral surface of the stator yoke, the convex portions of plate 32 and the hole 50 of plate 31 have the same profile in radial direction (as shown in Fig. 8D). The convex portions of plate 32 together with the holes of plate 31 retain the field magnet. For the reasons explained above, the rejection is still deemed proper.

### ***Allowable Subject Matter***

9. Claim 6 is allowed.

10. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record does not show a commutator motor wherein the stator yoke is

Art Unit: 2834

constituted by a plurality of substantially identically configured iron plate-like arcuate bodies, and wherein the non-magnetic portion is made from anon-magnetic bar members extending in the axial direction of the stator yoke and held between confronting ends of the arcuate bodies, a combination of two arcuate bodies, and two non-magnetic bar members providing an annular body

***Conclusion***

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanh N Nguyen whose telephone number is (571) 272-2031. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner 's supervisor, Darren Schuberg, can be reached on (571) 272-2044. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

HNN

May 17, 2005

  
DARREN SCHUBERG  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800

Application/Control Number: 10/661,560  
Art Unit: 2834

Page 12